Observing iterative design on the mobile indie game Dominaedro

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Abstract
Smartphones and tablets lead sales of electronic devices around the world, and offer a rich field to explore gaming initiatives. Mobile media created a ludic ecosystem in which large publishers and small studios coexist; the new ways of digital content distribution allowed a gaming market with big productions and indie experiments to live in the same platforms. In this scenario, we want to analyse a development process involving an independent Brazilian mobile game named *Dominaedro*, launched by Ludofy Studio in 2014. Our focus in this work will be to discuss iterative design – a design methodology based on a cyclic process of prototyping, testing, analysing, and refining a work in progress. In this context, we understand iterative design as a methodological tool to create a game. We intend to observe this kind of development process, emphasizing the analogical prototyping phase that gives us feedbacks from the beta-testing players, as in a qualitative research. Finally, we present the importance of the iterative design to quality assurance in the digital version of the game. Data collected through 20 beta testing sessions showed the importance of iterative process to improve a gaming experience and to facilitate the production of the digital product. Based on this content we will demonstrate the whole process of creating a mobile game – from the idea, through the prototypes, until reaching the final version. We conclude, highlighting the current tendency to create indie games using accurate design methodologies to gain audience in a very competitive scenario, and how indie games could be a learning point for aspirational game designers and small publishers; we will also emphasize the importance of using digital social networks and specialized media to publish and support an independent game.

Key Words: entertainment, mobile, iterative process, Dominaedro, indie game, Brazil.

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1. Introduction

Undoubtedly, the contemporary multiplatform environment, with so many connections between different devices, became a rich ambient for ludic experiments and new gaming interfaces. In this scenario, video games are expanding possibilities beyond consoles and reaching players in a huge range, where mobile platforms appear prominently as a privileged place for great publishers and independent studios.

The logical of anytime/anywhere connection present in mobile platforms is a turning point for new business models and entertainment products around the world. Inside this scenario, Brazil is revealed as a market full of possibilities. As an emergent country, Brazil is a land of contrasts. The country is the fifth largest in the world, it has the sixth largest population and it ranks seventh in terms of Internet usage. Brazilians are heavy Internet users, spending the largest average number of hours online[1].

It may sound curious, but it is a fact: the number of mobile phones in Brazil nowadays is larger than the size of its population. In the beginning of 2014, more than 283 million phone lines were in activity in the country and more than 40 million smartphones are expected to be working[2]. This is an important point to highlight because in the last five years mobile Internet access has become dominant in Brazil. A recent study from Nielsen has found that Brazilian mobile users mainly download games, social networks and video applications[3].

Despite all potential, Brazil does not have a formal gaming industry. The inexistence of big publishers or major companies prevents the massive development of games for consoles or PC platform. In the other hand, mobile platforms reveal interesting ways to show Brazilian gaming products to the world.

It is essential to point out some characteristics of the Brazilian gaming scene, looking to shed light on the common sense that the game industry refers only to videogame consoles or mainstream PC games. This perception is something that specialized media seems to emphasize, because that seems to be the preference of games heavy users - although, as seen through research, the casual gamer plays more games and for longer than the hard core gamer, as Juul (2010) says.

Lots of small publishers and studios are arising in the Brazilian mobile gaming scenario. Many mobile powerhouses and advertising agencies are creating spaces for game developing inside their structures. As examples to our discussion, we can bring the Brazilian companies PontoMobi Mobile Solutions, Sioux Game Studio and Ludofy Creative Mobile, the last one responsible for *Dominaedro*, the game we bring as the protagonist in this work. It is not the focus of this paper, but it is also important to highlight that social media games and *advergames* (games created for brands, products and services) are another way Brazilian game designers and companies found to make their games profit.

Based on this gaming scenario, we will observe the *Dominaedro* game and its main features to further discuss the methodological and creative process of this game. We intend to show that even independent small games require accurate processes to materialize themselves with quality assurance and relevant fun components.

2. About Dominaedro

Dominaedro is a strategic puzzle that mixes dominoes and tic-tac-toe. The game can be played versus the computer or other player online and it is available

for iPad and iPhone. This game fits the casual game category that can be defined as games that are quick to play, with simple mechanics and accessible to players with different ability levels; in this kind of game the rules and goals must be clear, players need to be able to quickly reach proficiency and the gameplay must adapt itself to a player´s life and schedule[4].

The game mechanics is very simple and it is represented in a few steps in the game's tutorial. The game's grid is arranged with nine numbers from 1 to 12 (Image 1 - A) randomly selected by the system.

A player starting hand has 3 domino pieces. On a turn, a player must try to put a single piece in the grid respecting the following rules: 1) A number in a domino can only touch a piece with the same number, or lower, in the grid and you can use both sides; every time you choose a piece, the system will point out the spaces allowed for allocating on the table. (Image 1 - B); 2) Like in a domino game, pieces connected on the grid must have the same numbers (Image 1 - C).

A player earn points by dominating a sum on the grid, like the computer (orange) that scored 7 points by dominating all the sides of the superior 7 on the grid (Image 1 - C). For that, a player with the highest sum of numbers around a piece wins the points. In the case of a tie, the sum of the second value of dominoes sets the winner. If there is a tie in both sides of the dominoes, the winner will be the player with more pieces.

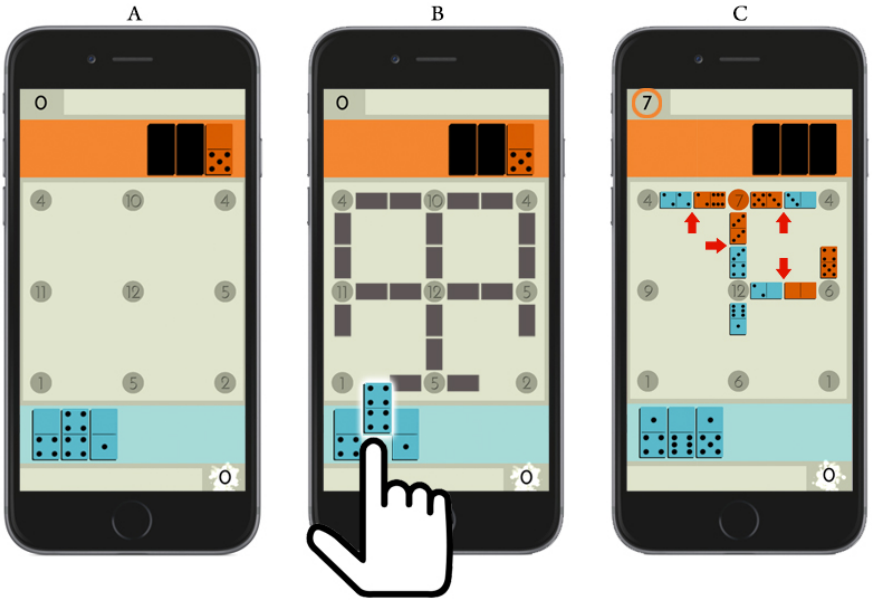

Image 1: *Dominaedro*'s interface and mechanics.

The game ends when a player cannot allocate more pieces on the grid. Each piece not allocated is worth -1 point. Values of the grid that were not completely surrounded by pieces are scored normally.

Trying to hybridize with the mechanics, the interface is minimalist and the focus is centred on gameplay. It is important to remember that gameplay is only one element in the composition of modern games and it means interesting choices[5]. Schell says that the goal of a good gaming interface isn't 'to look nice' or 'to be fluid', although those are nice qualities, the goal of an interface is to make players feel in control of their experience[6].

Much is said about interface in games today. After long discussions, producers and game designers discovered that a merely beautiful game does not work as a product or as a good experience to different kinds of players. Simplicity and organization should still be the design goal, the user will enjoy being able to look at a screen and instantly know what to do[7]. This balance between interface, experience and gameplay will be discussed in our next topic, where we bring the iterative design as a methodological process to create a mobile game.

For more information, a video in YouTube explains with motion graphics the main features of *Dominaedro*[8]. The game is available for free in Apple's App Store and we will talk – in the last topic of this work - about the model business and launching campaign.

3. Methods and Results

Gaming creativity process, allow a myriad of methodological using possibilities. However, in this text we intend to focus our efforts in study the iterative process during the creation of *Dominaedro*.

One first view about this methodological process comes from Zimmerman, who says, 'iterative design is a design methodology based on a cyclic process of prototyping, testing, analysing, and refining a work in progress'[9].

Complementing the previous idea, the process of iterative design for games, can be divided into few stages: A) conceptual phase: consists of generating ideas, formalizing and testing them; B) pre-production: here the ideas are reviewed to evolve and be tested again; C) the production stage: the game is tested and revised with different groups of play testers to locate errors; D) phase of quality assurance: where the game is tested to be launched without errors[10].

We will discuss each phase of this process detailed below:

A) Conceptual phase: in this first step, *Dominaedro*'s producers (me included among them) made a wide research playing abstract games (analogical and digital) to develop the first mechanical ideas of the game; games like chess, checkers and yinsh provided part of the inspiration for the project. A series of notes and references were made in this phase and, in the end, there is a draft with the core mechanics, main dynamics and number of players allowed in the game. In the

conceptual phase occurred the first gaming tests amongst the few different groups of players involved with the project.

B) Pre-production: here the ideas were reviewed to evolve to testing; by the end of this phase, an analogical prototype – created with polyhedral dice and dominoes – was ready for accurate tests. It is important to say that this phase was fundamental to visualize some components like art and programming. In the pre-production, we could test the game with beta-tester groups and organize a dialogue between different kinds of players as an inspirational key to open some new passages in the game design process. Some feedbacks from players in interviews are nuclear guides to improve a game's mechanics, dynamics, narrative and layout.

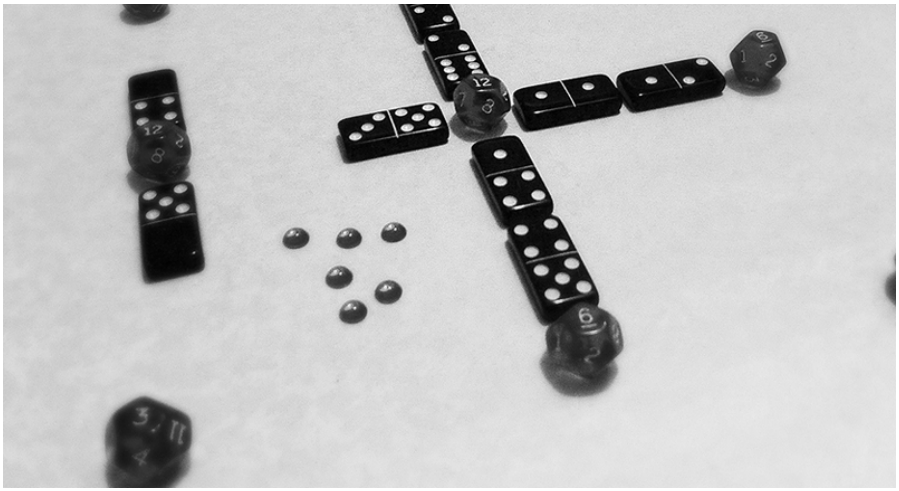

Image 2: *Dominaedro's* analogical prototype.

In this context, it is always essential to remember that games 'are fundamentally interactive, relying on communication between the player and their character, the player and the content, and even players with one another' and it's crucial to ponder that 'while games are developed in a studio, at least part of their meaning and significance is created at the moment of play and through the people who play them'[11].

Based on these thoughts was created a qualitative interview to be applied with the beta testing players after *Dominaedro*'s playing sessions. The idea was to understand strengths and weaknesses to be worked in the next phase of the process. The qualitative method is one of many good ways to understand the creation of meaning and significance in a gaming interface. To conduct a qualitative interview it's necessary to have a good script with clear objects imbricated in the questions.

Cote and Raz teaches us how to write a qualitative interview guide adapted for a gaming universe[12]:

1. Create an introductory script to open the interview and remind study goals.

2. Warm-up questions to put the participant at ease and build rapport. Questions like 'How long have you been playing videogames for?' and 'What's one of your favourite gaming memories?' are good kick-starting contents.

3. Substantive questions to collect deeper data that answers the research questions. This part is the core of the interview, here the player will give feedbacks about gaming interface, mechanics and other aspects. For *Dominaedro*'s beta testing the following questions were proposed to the interviewed players:

3a) Talk about your experience with *Dominaedro*

3b) Did the game work or not?

3c) Did you feel challenged by your opponent?

3d) Are the rules small, medium or complex to understand?

3e) At the end of the first game, did you feel the urge to play again?

3f) Did you have fun with the game?

3g) Feel free to add any comments about the game.

4. Demographic questions to gather data needed to describe participants.

Ten beta sessions were conduced with almost twenty different players in ESPM University Game Lab and some game stores in the city of São Paulo. The last ten sessions pointed some repetitive results signalizing a good data stored for the next phase. Applying qualitative process with iterative design is a great challenge for the game designing process but it is an essential component for a better development process. Armed with enough data, we leave for the next stage of the process.

C) Production stage: a digital *Dominaedro* prototype was developed in this phase. After the playing sessions with the analogical prototype and player's feedback, the producers started to refine the digital prototype planning the final interface. This digital version was tested and revised with ten different groups of new players to locate problems and searching an error-free product[13] using the same previous qualitative interview guide. Based on beta-test player feedbacks, a minimal artwork was established for the game using simple angular graphics and soft colours (as seen previously in image 1).

D) Quality assurance: final tests were made on a multiplayer system. In the final stage of producing the game, new tests were performed in different versions of the iPhone/iPad, to ensure a good experience.

It is fundamental to remember that the iterative design is a cyclical process. In case of failure in any one of the stages – or if the final result is not achieved adequately – the developers must return to the starting point to rethink and redesign the failure points. The qualitative research inside the pre-production phase is one of the most important points of this process; to test a game is not about the developers playing many times a prototype, the idea is put different people to test

and get the great number of feedbacks possible. Even for an independent game created by a small studio like *Dominaedro*, it is essential to use accurate methodology processes to create a quality product for an increasingly qualified audience. With the game produced and fully operational, we reach another challenging stage of the process: the launching.

The game was launched in App Store for free (with ads as business model) and managed to get almost 10.000 downloads in its third month. Specialized sites like www.indiegames.com published posts about the game[14]. It is important to highlight that, especially for indie games, it is essential to use some budget for Facebook advertising and a digital media kit destined to specialized media (mainly blogs and fan pages).

5. Conclusions

By discussing the creative process of *Dominaedro*, we hope to demonstrate how strong is the relationship between players and small/big companies in the contemporary digital gaming ecosystem. We claim it is of utmost importance to use methodological process even for independent productions.

Despite being a game created by a small studio, we can see the importance of working with a consistent methodology and it is possible to imagine the iterative process applied in bigger projects. We hope we can contribute with the field of gaming studies and that this discussion earns future developments.

The Brazilian gaming market, as an emergent market, reveals itself as a privileged ambient to observe these creativity processes. We welcome the opportunity to present this relevant discussion as a means of contributing to the on-going efforts in exploring the gaming market in contemporary culture.

Notes

[1] 23 hours a week, according to the latest available figures.
[2] Source: Teleco <http://teleco.com.br/>. (last access: May, 2015)
[3] Source: Nielsen <http://goo.gl/ANxTq0> (last access: May, 2015)
[4] Gregory Trefay, '*Casual Game Design*' (Burlington: Morgan Kaufmann, 2010).
[5] Adams Rollings and Dave Morris, '*Game Architecture and Design*' (Indianapolis: New Riders, 2004), 59.
[6] Jesse Schell, '*The Art of Game Design*', (Burlington: Elsevier, 2008), 222.
[7] Fox Brent, '*Game Interface Design*', (Boston: Thomson, 2005), 69.
[8] Dominaedro's concept video < https://youtu.be/LCF0Mel__z8>
[9] Eric Zimmerman, 'Play as Research: the Iterative Design Process' in *Design Research: Methods and Perspectives*, (2003), 176.
[10] Tracy Fullerton et al. '*Game design workshop: a playcentric approach to creating innovative games*'. (Burlington: Morgan Kaufmann, 2008), 249.

[11] Amanda Cote and Julia Raz. 'In-depth interviews for game research' in *Game research methods: an overview* ed. Petri Lankoski and Staffan Björk (Halifax: ETC Press, 2015), 93.
[12] ———. 'In-depth interviews for game research' in *Game research methods: an overview* ed. Petri Lankoski and Staffan Björk (Halifax: ETC Press, 2015), 104.
[13] Jussi Holopainen et al. 'Modelling experimental game design' in *Proceedings of DiGRA Nordic 2010: Experiencing Games: Games, Play, and Players*. (2010), 1.
[14] Seen in <http://indiegames.com/2014/07/free_ios_pick_dominaedro_is_a_.html> (last access: May, 2015)

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